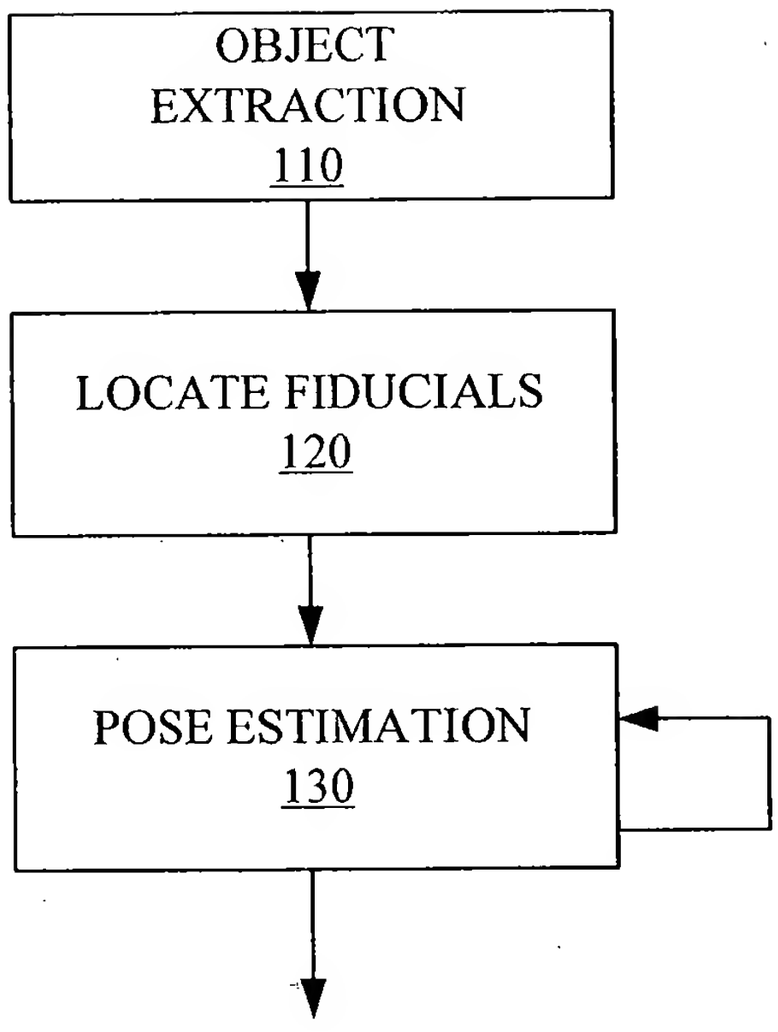
OBJECT
EXTRACTION
110
LOCATE FIDUCIALS
120
POSE ESTIMATION
130

FIGURE 1

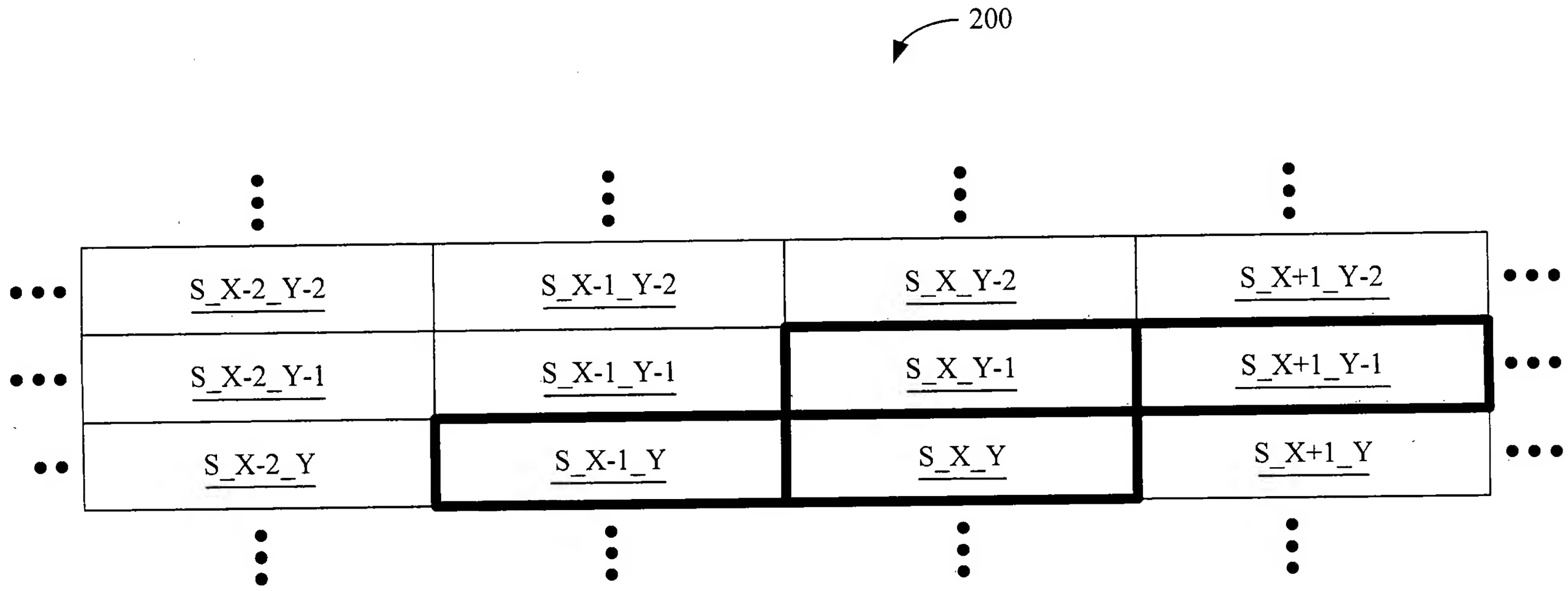
200
S_X-2_Y-2
S_X-1_Y-2
S_X_Y-2
S_X+1_Y-2
S_X-2_Y-1
S_X-1_Y-1
S_X_Y-1
S_X+1_Y-1
S_X-2_Y
S_X-1_Y
S_X_Y
S_X+1_Y

FIGURE 2(a)

250

	P_0	P_1	P_2	P_3	P_4	P_5	P_6	P_7	P_8	P_9	P_10	P_11	P_12	P_13	P_14	P_15
L_0	0	0	0	179	0	0	0	0	0	0	0	0	0	189	0	0
L_1	0	0	201	234	196	198	0	0	0	0	0	0	184	216	0	0
L_2	0	0	192	67	189	212	0	200	199	0	0	0	0	0	0	0
L_3	0	0	0	207	194	0	0	0	0	0	0	0	0	191	194	0

FIGURE 2(b)

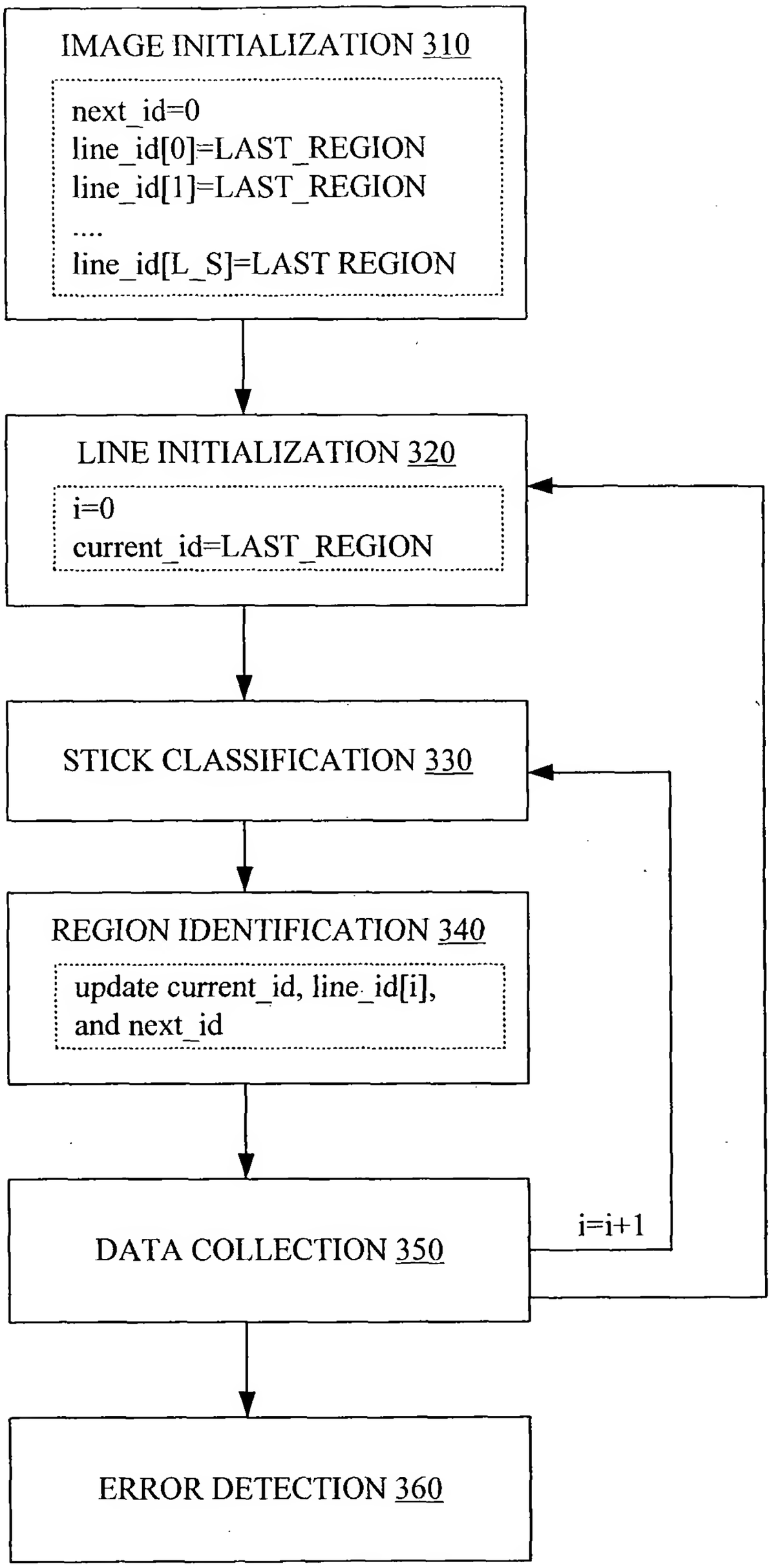
IMAGE INITIALIZATION 310
next_id=0
line_id[0]=LAST_REGION
line_id[1]=LAST_REGION
....
line_id[L_S]=LAST REGION
LINE INITIALIZATION 320
i=0
current_id=LAST_REGION
STICK CLASSIFICATION 330
REGION IDENTIFICATION 340
update current_id, line_id[i],
and next_id
DATA COLLECTION 350
i=i+1
ERROR DETECTION 360

FIGURE 3

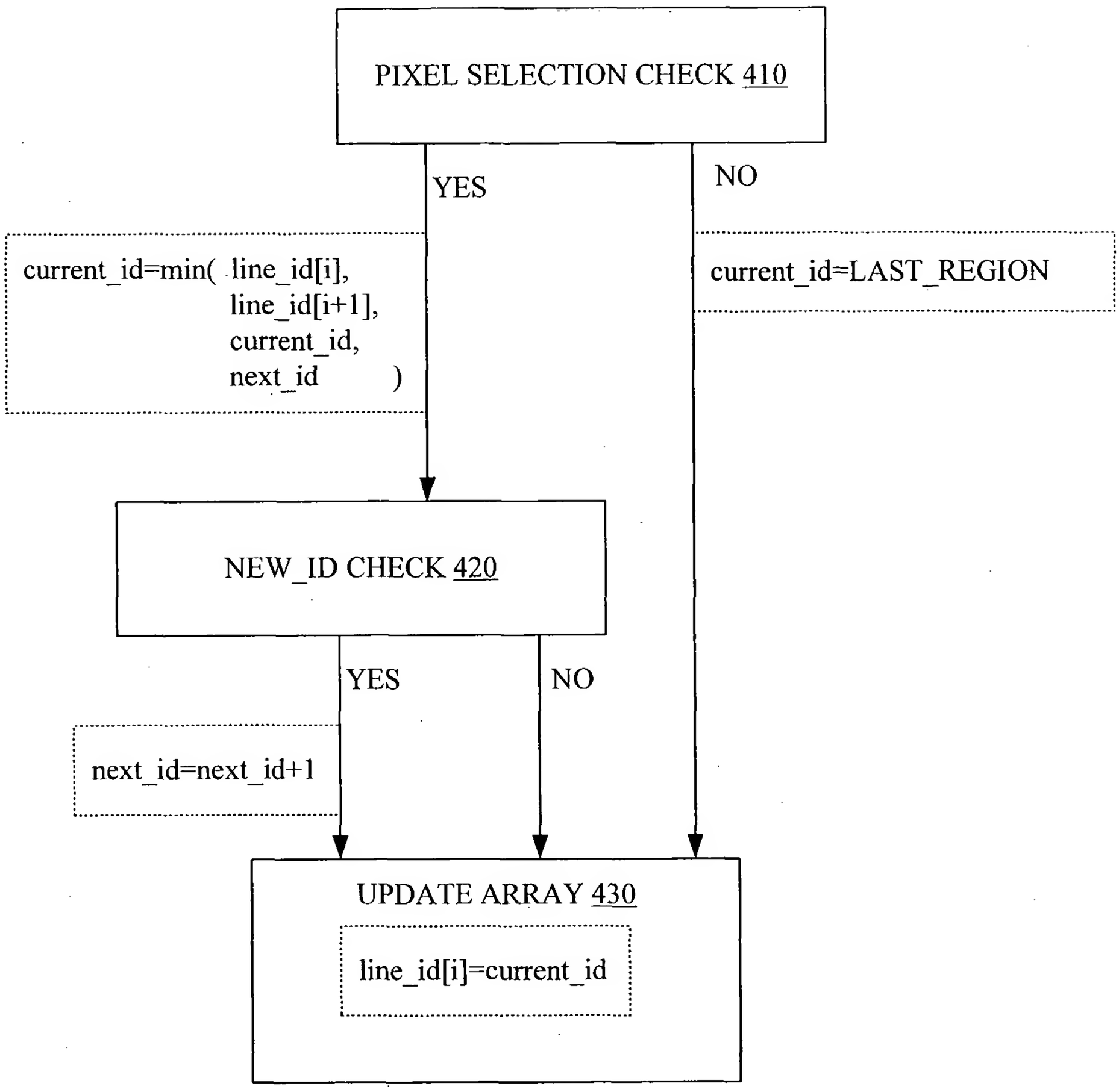
PIXEL SELECTION CHECK 410
YES
NO
current_id=min(line_id[i],
line_id[i+1],
current_id,
next_id)
current_id=LAST_REGION
NEW_ID CHECK 420
YES
NO
next_id=next_id+1
UPDATE ARRAY 430
line_id[i]=current_id

FIGURE 4

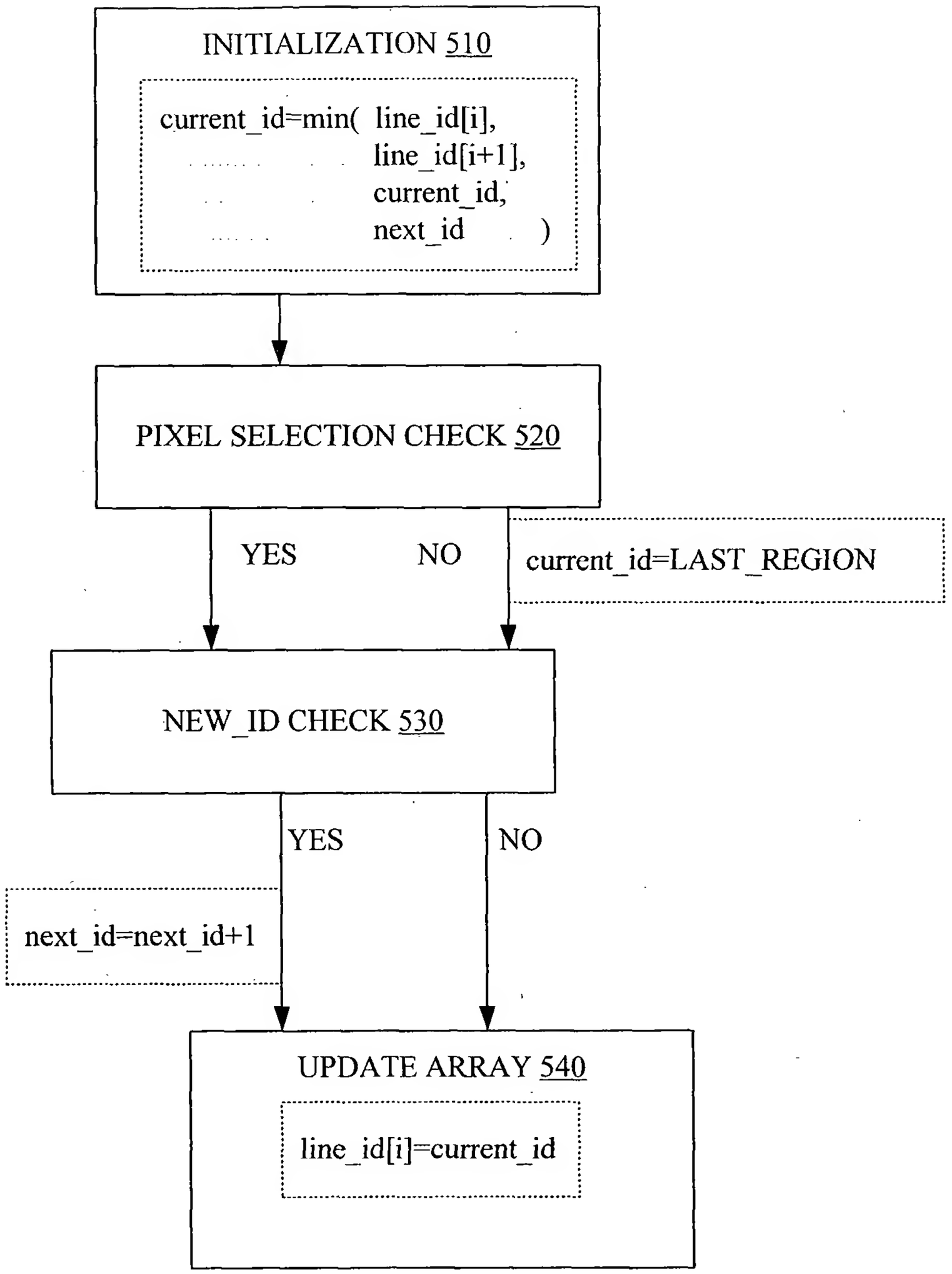
INITIALIZATION 510
current_id=min(line_id[i],
line_id[i+1],
current_id,
next_id)
PIXEL SELECTION CHECK 520
YES
NO
current_id=LAST_REGION
NEW_ID CHECK 530
YES
NO
next_id=next_id+1
UPDATE ARRAY 540
line_id[i]=current_id

FIGURE 5

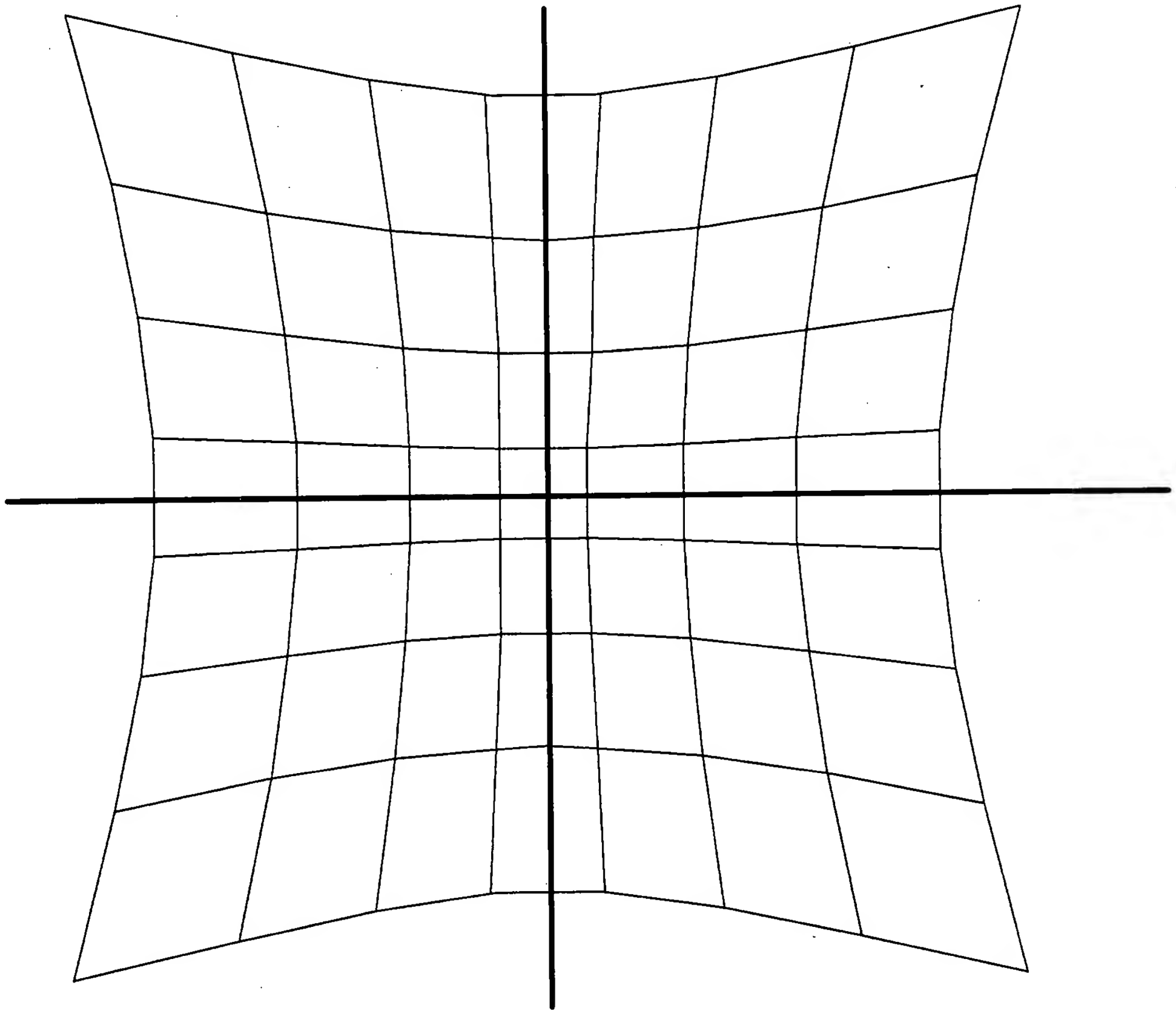

FIGURE 6

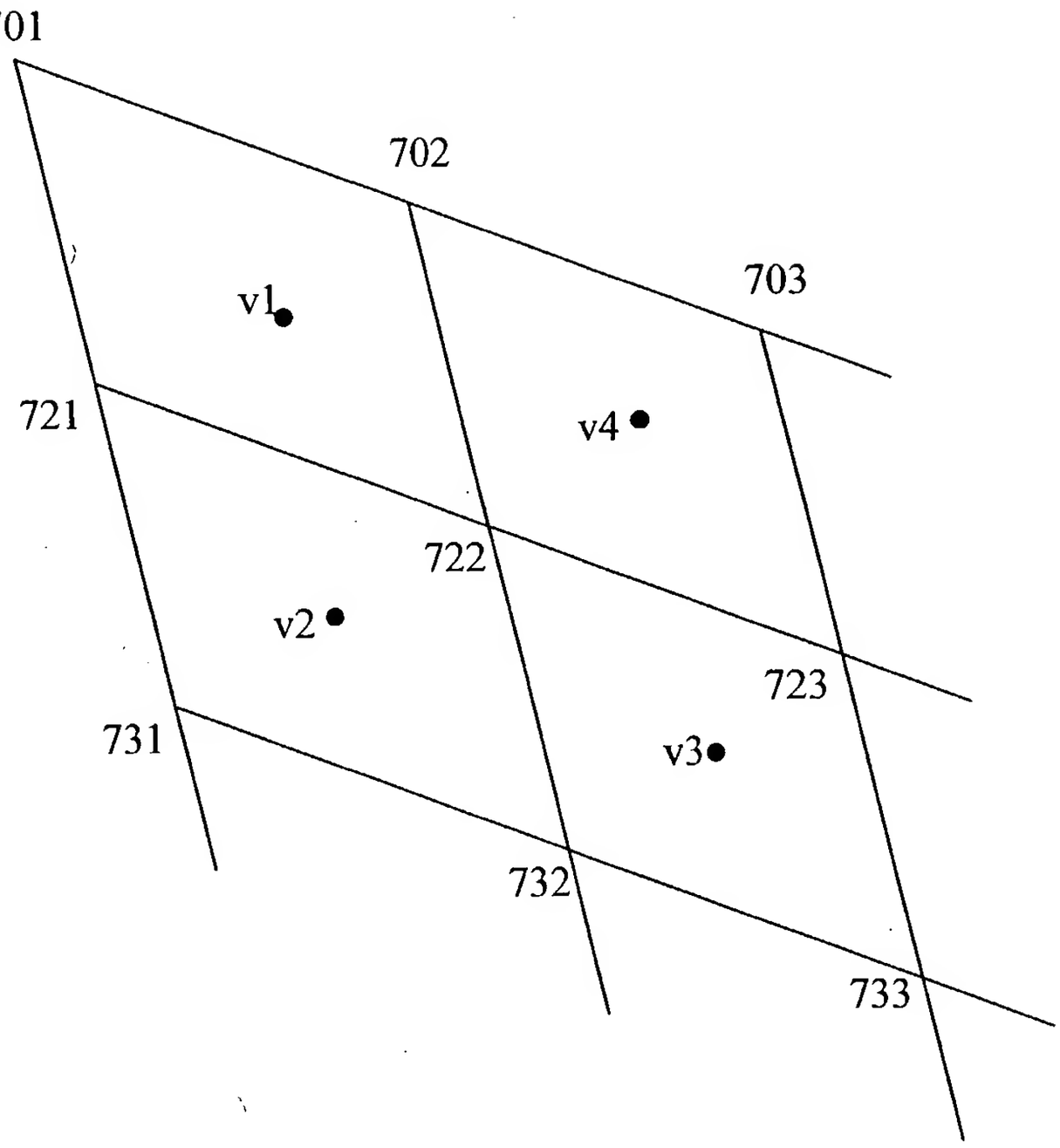

FIGURE 7

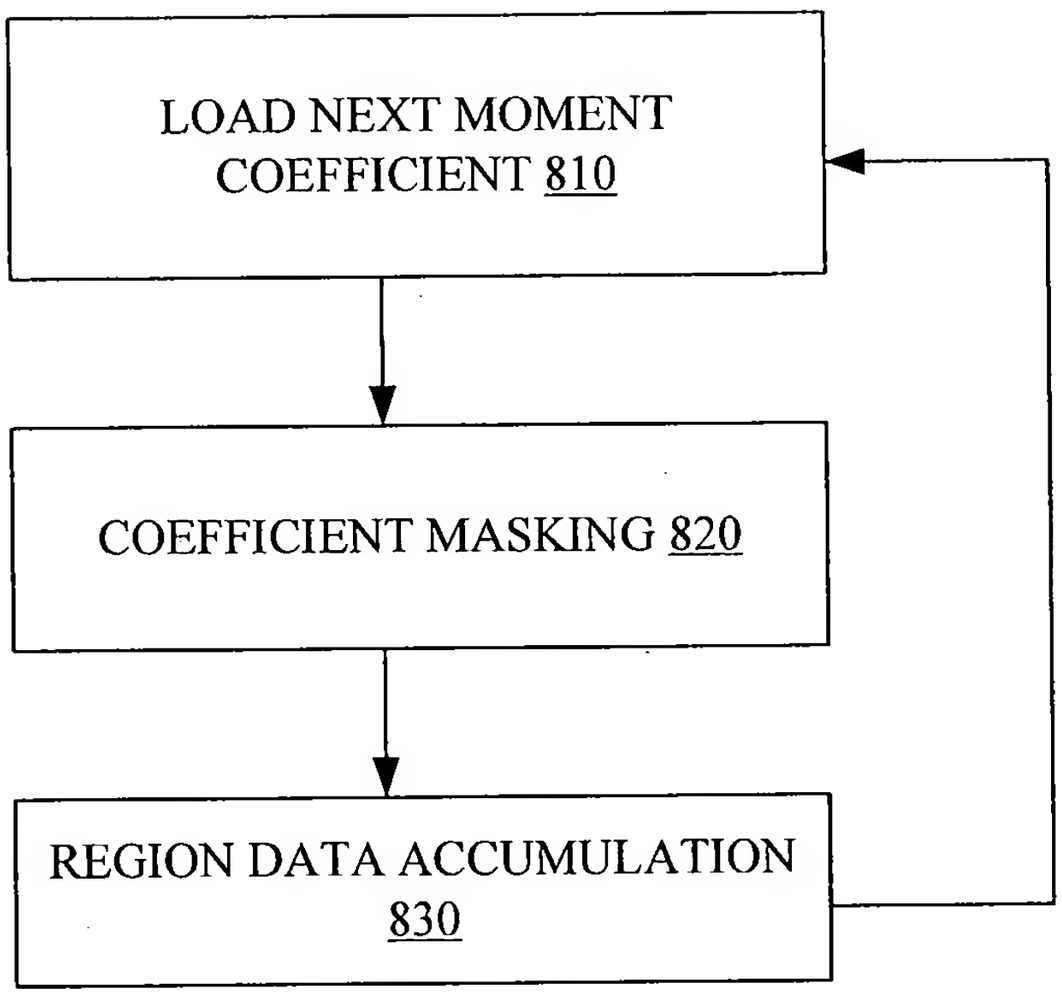
LOAD NEXT MOMENT COEFFICIENT 810
COEFFICIENT MASKING 820
REGION DATA ACCUMULATION 830

FIGURE 8

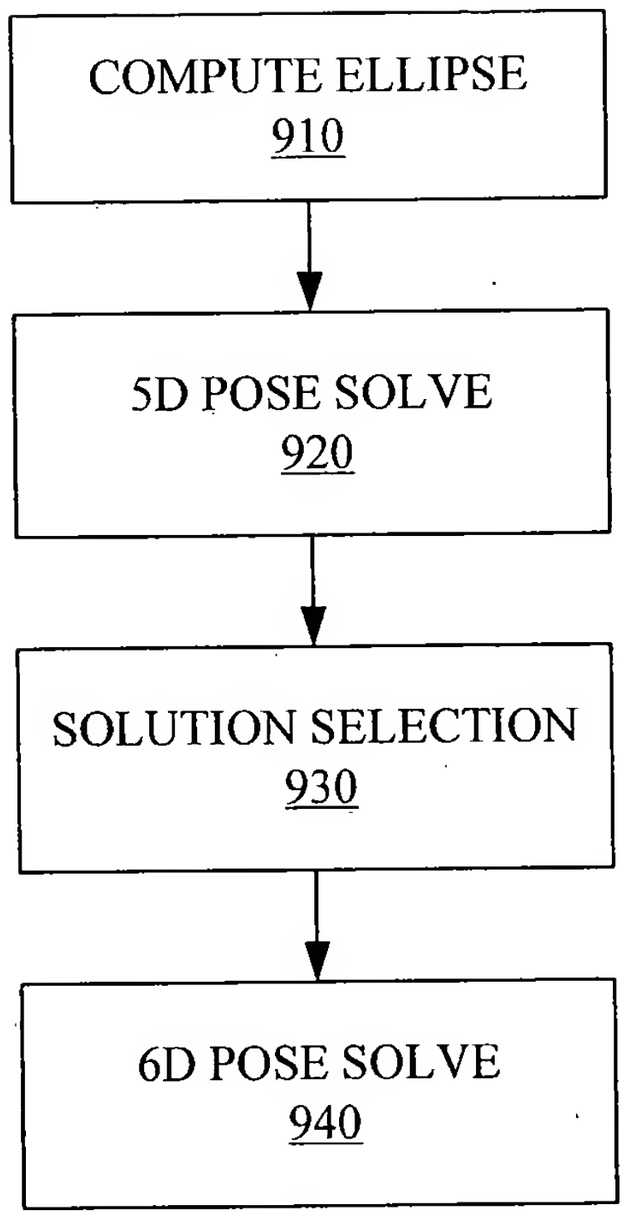
COMPUTE ELLIPSE
910
5D POSE SOLVE
920
SOLUTION SELECTION
930
6D POSE SOLVE
940

FIGURE 9

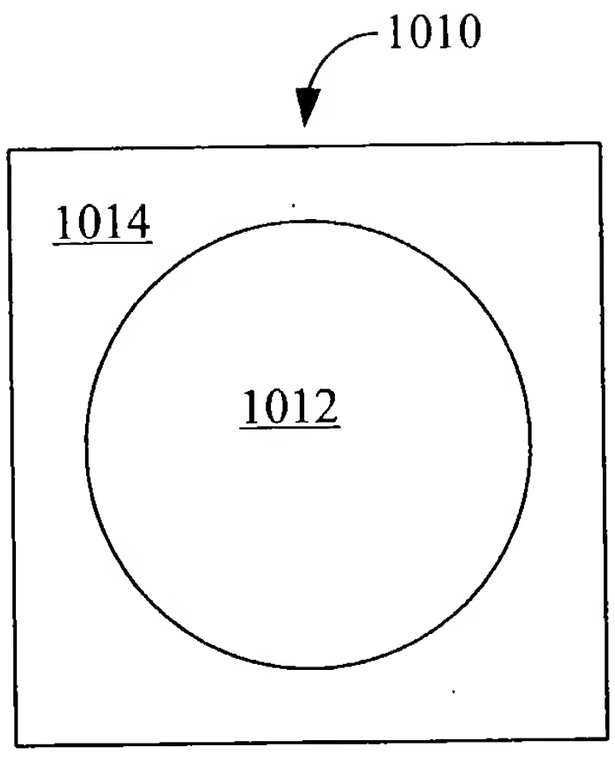

FIGURE 10(a)

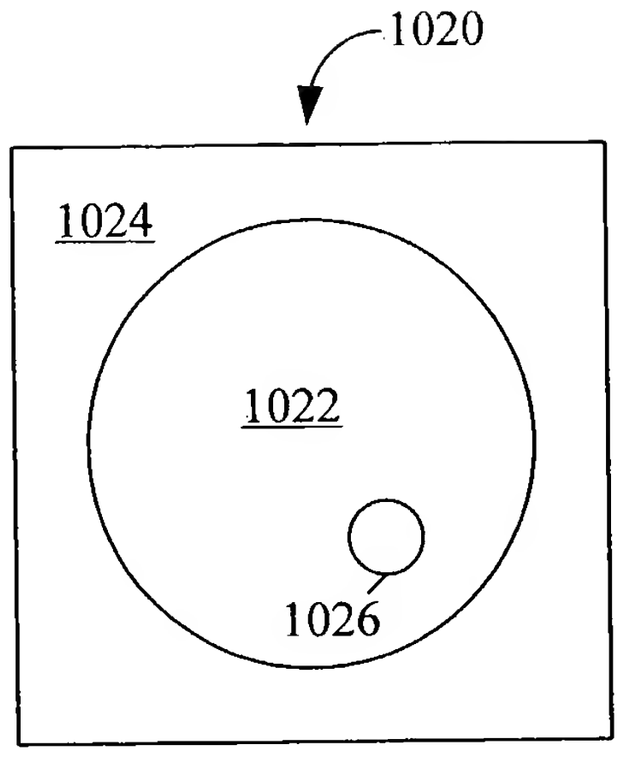

FIGURE 10(b)

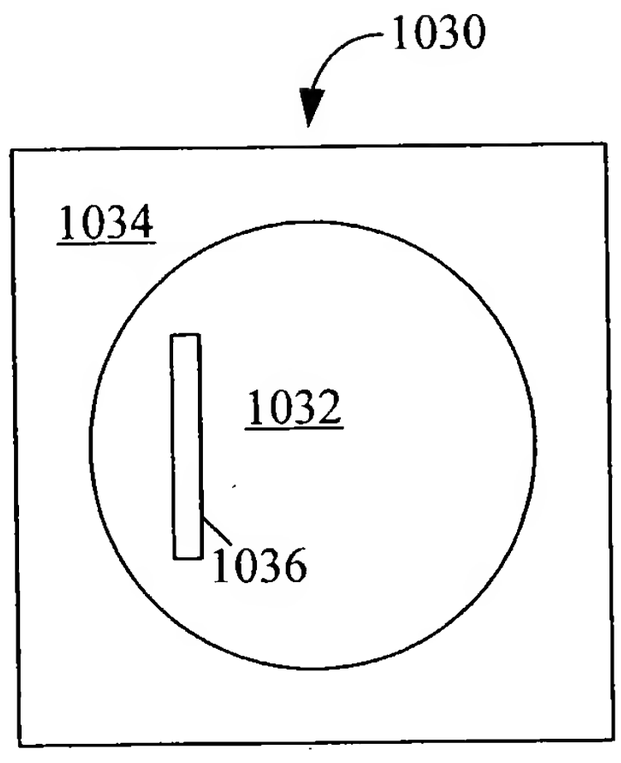

FIGURE 10(c)

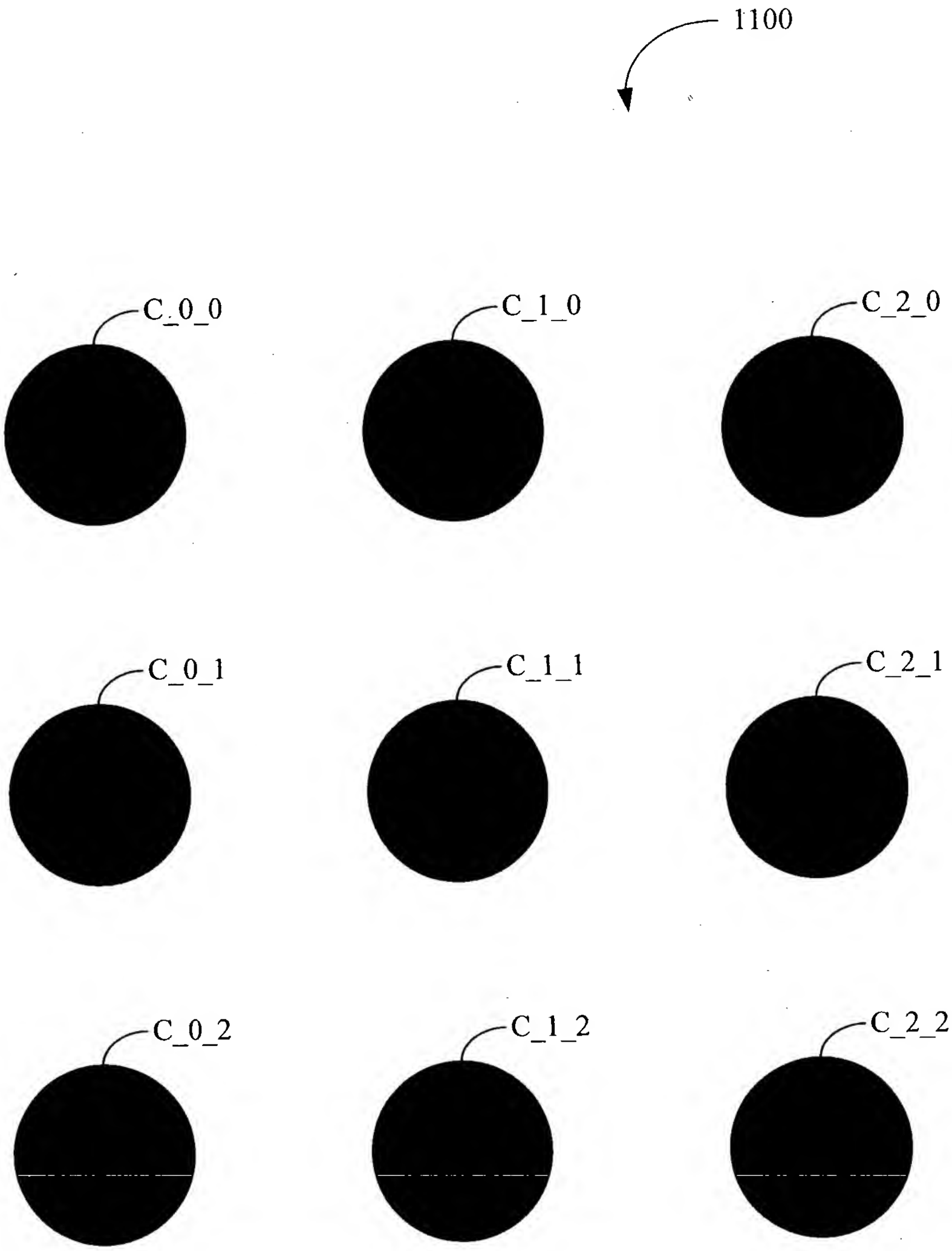

FIGURE 11

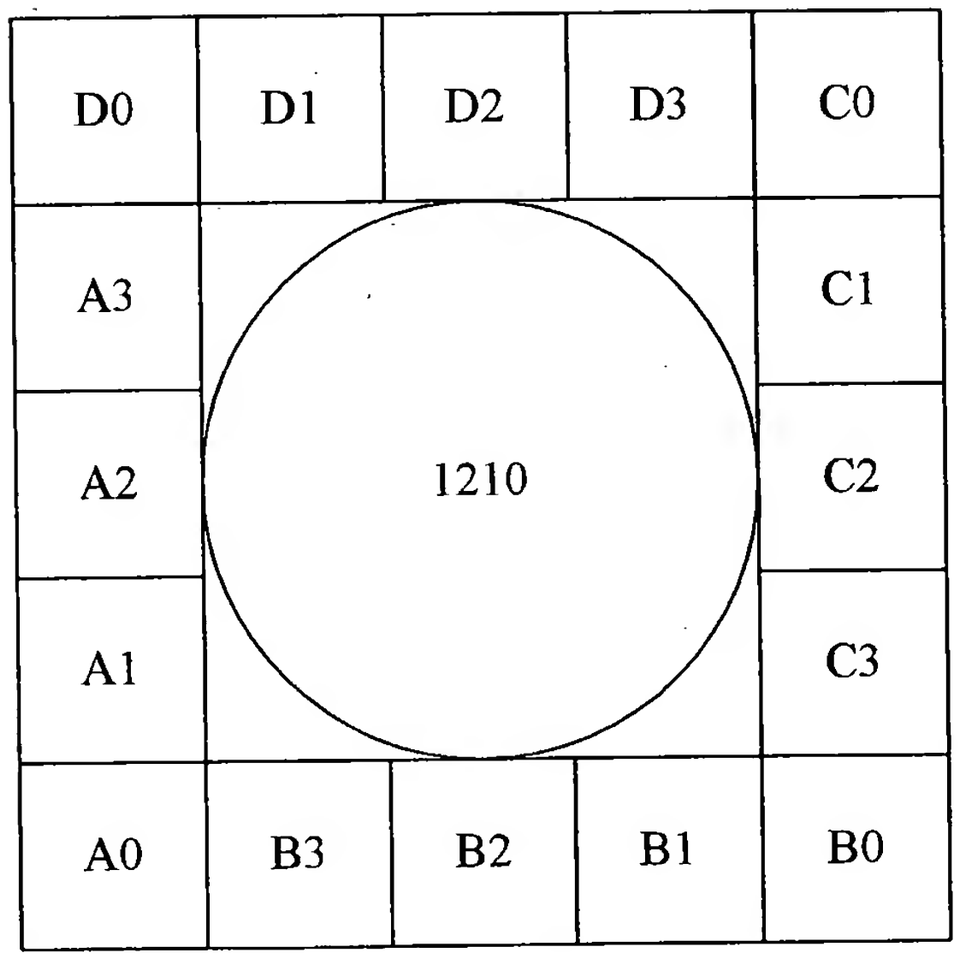

FIGURE 12

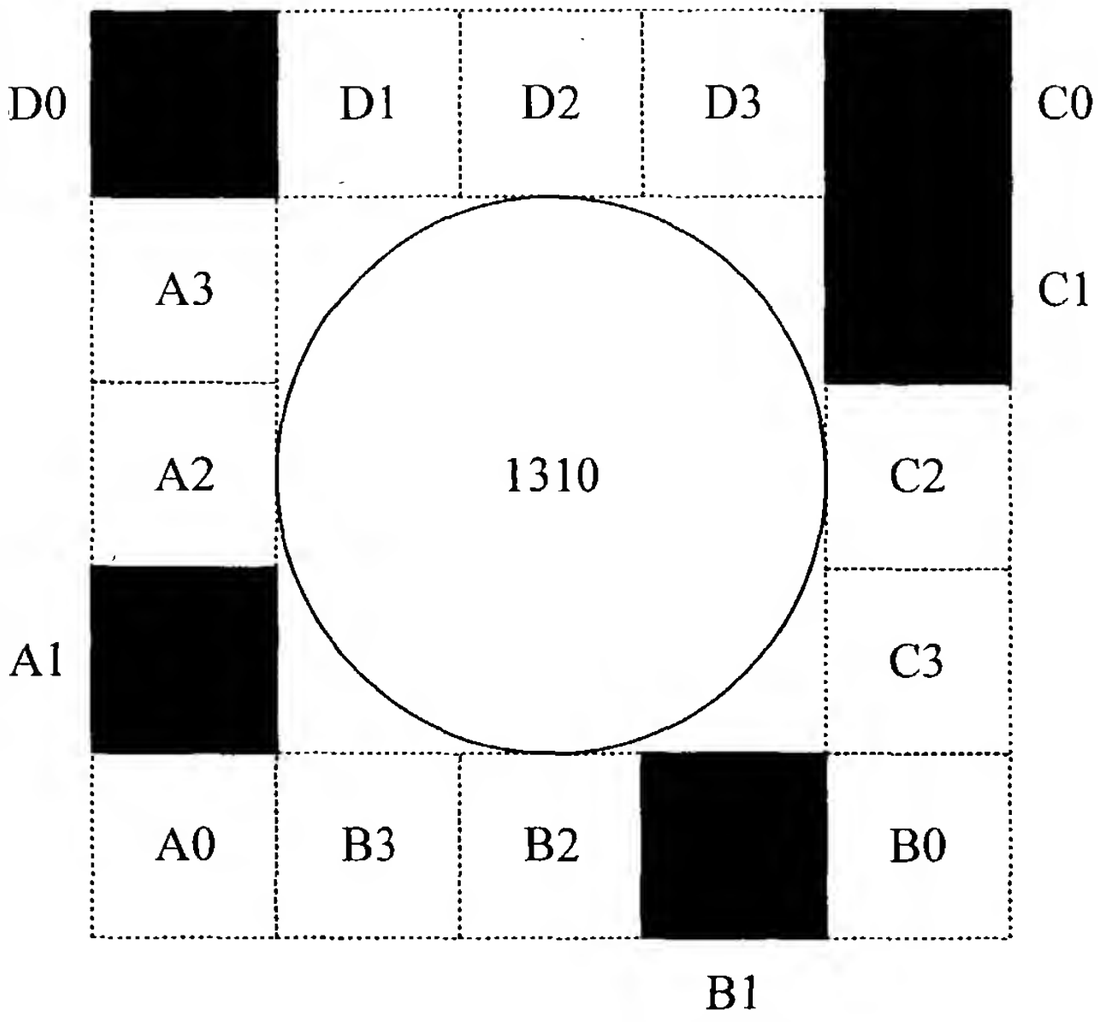

FIGURE 13(a)

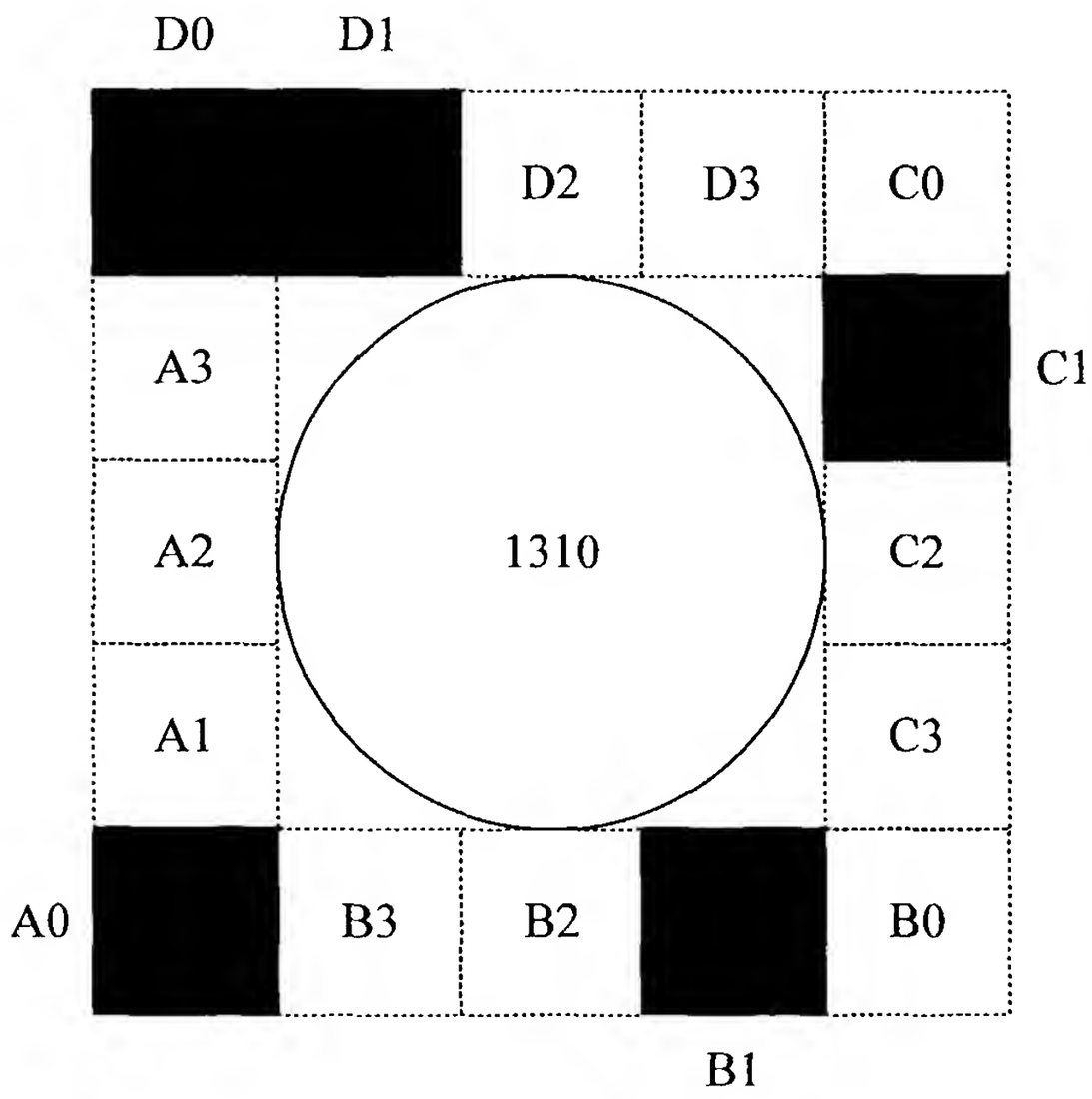

FIGURE 13(b)